

What is Claimed is:

1. A clothes dryer comprising:
  - a rotatable drum;
  - a first motor;
  - a drum transmission connected between the first motor and the drum, the first motor adapted to drive the drum transmission to rotate the drum;
  - an air exhaust passageway for exhausting air from the drum out the dryer;
  - a fan mounted in the air exhaust passageway for drawing air from the drum and exhausting air out of the dryer; and
  - a second motor adapted to rotate the fan, and the second motor comprising a two pole self speed regulated induction motor.
2. The clothes dryer of claim 1 wherein the first motor includes a first shaft and the drum transmission comprises a first pulley mounted to the first shaft and a continuous belt extending around the first pulley and the dryer drum.
3. The clothes dryer of claim 2 wherein the drum transmission further includes an idler pulley adapted to engage the endless belt and maintain the endless belt in tension about the dryer drum and the first pulley.
4. The clothes dryer of claim 1 wherein the fan comprises a tangential fan having an axis of rotation adapted to draw air towards the axis of rotation and then radially out from the fan, and the second motor has a second shaft adapted to connect with the fan and rotate the fan about its axis of rotation.
5. The clothes dryer of claim 1 wherein the first motor is a four pole induction motor.
6. The clothes dryer of claim 1 wherein the second motor has a variable speed in the range of 3300 rpm to 1800 rpm.
7. The clothes dryer of claim 6 wherein the speed range is directly proportional to air flow restrictions of between 0 and 4 inches in diameter in an exhaust vent of 4 inches in diameter.

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8. The clothes dryer of claim 1 wherein the second motor has a second shaft connected directly to the center hubs of the fan to rotate the fan.

9. A clothes dryer comprising:

a rotatable drum;

a first motor;

a drum transmission connected between the first motor and the drum, the first motor adapted to drive the drum transmission to rotate the drum;

an air exhaust passageway for exhausting air from the drum out the dryer, the air exhaust passageway having an outlet port adapted for connection with an external vent;

a fan mounted in the air exhaust passageway for drawing air from the drum and exhausting air out of the dryer and through the external vent; and

a second motor adapted to rotate the fan, and the second motor having a slip characteristic whereby the speed of the second motor automatically varies directly proportional to air flow restrictions associated with the external vent.

10. The clothes dryer of claim 9 wherein the second motor is a two pole motor.

11. The clothes dryer of claim 9 wherein the first motor includes a first shaft and the drum transmission comprises a first pulley mounted to the first shaft and a continuous belt extending around the first pulley and the dryer drum.

12. The clothes dryer of claim 11 wherein the drum transmission further includes an idler pulley adapted to engage the endless belt and maintain the endless belt in tension about the dryer drum and the first pulley.

13. The clothes dryer of claim 9 wherein the fan comprises a tangential fan having an axis of rotation adapted to draw air towards the axis of rotation and then radially out from the fan, and the second motor has a second shaft adapted to connect with the fan and rotate the fan about its axis of rotation.

14. The clothes dryer of claim 9 wherein the first motor is a four pole

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induction motor.

15. The clothes dryer of claim 9 wherein the second motor is a two pole induction motor having a variable speed in the range of 3300 rpm to 1800 rpm.

16. The clothes dryer of claim 15 wherein the speed range is inversely proportional to air flow restrictions of between 0 and 4 inches in diameter in an exhaust vent of 4 inches in diameter.

17. The clothes dryer of claim 9 wherein the second motor has a second shaft connected directly to the center hubs of the fan to rotate the fan.